# Subject Index

Administration; problems and forms of, in Nebraska, 1230

standard wage and salary; plan for, 405 utility; in Canada, 740

problems of, in Nova Scotia, 743 in Ontario, 753

water works; problems and forms of, 1222 Air conditioning; municipal regulation and sanitary control of water for, 334

Akron, Ohio; financing sewage works improvements in, 325

Alkalinity; calculation of, by the use of nomographs, 895

American Research Committee on Grounding; interim report of investigations of,

American Standards Association; specifications for steel pipe flanges and flanged fittings; A.W.W.A. objections to, 968

American Water Works Association; audit of association funds for 1943, report of, 359

Board of Directors; action of, on U.S. Public Health Service drinking water standards, 213

committee reports; depreciation, 621 publications, 210

survival and retirement experience, 832 water works practice, 201

committees; American Research Committee on Grounding, interim report of investigations of, 383

on Control of Chlorination; adaptation of OTA test to conditions proposed by, 301

conference on wartime water works, report of, 1384

Journal of; membership directory, a supplement to the October issue

membership statement for 1943, 363 report of research project on effects of electric grounding on water pipes, 563

section meetings-1944, report of, 1393

statement of policy, grounding of electric circuits on water pipe, 381

Analysis; bacteriological; use of coliometer for, 1365

Anchor ice; problems with, at Milwaukee, Wis., 1020

Anthrafilt; use of, as a filter medium, 431 Aquifer; artesian; flow of water in, in Florida,

174 Army; water plant operation in Seventh Service Command, 454

Artesian water; see Ground water

Backwash; filter; technic used with diatomites, 1212

Bacteria; analysis of, in finished water, at four southern Indiana plants, 1328

contamination by, in Detroit distribution system, 1356

Billing; bi-monthly; benefits of, 1371

flat and combined rate; for victory gardens,

Bills; water; renegotiation of, by federal agencies, 908, 1382

Body feed; importance of, to diatomite filtration, 1213

Boilers; corrosion of, prevention of, 304

Bonds: see Financing

British Waterworks Association; committee on reclamation of water softening sludge, 1169

# C

Calcium carbonate; new index for determining amount of, 472

recovery of, from water softening sludges, 1145, 1176, 1178

California; Railroad Commission; proposal of utility extension rules by, 311

Southern; Metropolitan Water District of, removal, reconditioning and installation of 36-inch steel pipe by, 43

State Employees' Retirement Act; effect of, on municipal water utility employees,

water works management and administration in, 1224

Camp Robinson, Little Rock, Ark.; design and construction of water supply line at,

Canada; utility administration in, 740, 743,

Carbon dioxide; free; calculation of, by the use of nomographs, 895

Chloramine; see also Chlorine

determination of, by ortho-tolidine test, 299 Chlorination; see also Chloramine, Chlorine Sterilization

control of, 300

de-; control of iron and sulfur organisms by,

effect of, on inactivation of virus in water,

emergency program for, in Los Angeles County, operation of, 187

methods of, at four southern Indiana water purification plants, 1328

super-; control of iron and sulfur organisms by, 1349

Chlorine; see also Chloramine

determination of; by ortho-tolidine-arsenite test, 296

differentiation of, from chloramine, 300 residual; automatic indicator and recorder

determination of, by use of ortho-

tolidine-arsenite test, 1343 treatment by, at four southern Indiana

plants, 1328 Coagulation; methods of, involving sodium silicates, 628

Coating; see also Lining

asphalt; field removal of, from 24-inch steel pipe, 59

Coefficient; resistance; calculation of, from incremental flow measurement, 163

Collections; see Billing

Color; effect of arsenite on, due to chlorine,

Columbia Steel Corp., Provo, Utah; calcium carbonate and lime recovery from water softening sludges at, 1164

Compounds; jointing; analysis of, at Milwaukee, Wis., 1039

Conditioning; threshold; in army-owned water plant, 459

water; for production of steam, 303 Connections; emergency; dangers of, 350

Conservation; effect of population shift on,

meterization programs as effective method

water; in Philadelphia Metropolitan District, 11

Philadelphia program for, 497

Construction; interconnections; in New Jersey, 1301

in New York State, 1294

water supply line, at Camp Robinson, 1323 water works; at Milwaukee, Wis., 1019 costs of, 821

Consumers; co-operation of, in reducing water consumption, 415

Consumption; pumping; statistics on, at Milwaukee, Wis., 1034

water; consumer co-operation in reduction of, 415

Contamination; see also Pollution

by minerals; hygienic significance of, 645 distribution system; by bacteria, study of, at Detroit, Mich., 1356

hazards of, in municipal water supply, 351 water supply; by poliomyelitis virus, 82

Corrosion; prevention of; corrective measures required for, at Lakeside, Wis., 304 well pumps; prevention of, 889

Costs; construction; for water works structures, 821

Couplings; variable speed; use of, with constant speed electrical motors, 1321

Cross-connections; hazards of, between a direct city supply and recirculating water, 350

legal limits of, 874

Cumberland, Md.; postwar planning in. program for, 76

De-chlorination; control of iron and sulfur organisms by, 1349

Delaware River; standards for prevention of stream pollution in, 6

Delaware River Basin; development of resources of, home rule program for, 1

Depreciation; committee report of National Association of Railroad and Utilities Commissioners on, 616

highlights of National Association of Railroad and Utilities Commissioners report on, 803

municipal accounting practices for, 811 Design; discharge valve control; at Milwaukee, Wis., 1070

water supply line; at Camp Robinson, 1323 water works; at Milwaukee, Wis., 1019 under wartime conditions, 662

Detritus; Devils Gate Reservoir; effect of, on Monk Hill Basin ground-water supply, 315 Detre

Dec.

Devil

Diato Disea Disin

5 Distr des

> ope poll pra

Drink U.S

Drink

H

Duval

orga Equip elect Errata

Emplo

Federa ce Federa en

Filters

Filtrat fie Financ for

inter in post wate

Findla

Fire hy

1.36

hod

Dis-

Jer-

323

ter

at

ion

of,

51

res

IC-

11-

ng

in,

ur

of

6.

al

es

1

n

- Detroit, Mich.; contamination of distribution system at, by bacteria, study of, 1356
- Devils Gate Reservoir; effect of detritus in. on Monk Hill Basin ground-water supply, 315
- Diatomite; use of, as a filter medium, 1208 Disease virus; transmission of, by water, 81
- Disinfection; wells, springs and appurtenances; recommended procedure for,
- Distribution systems; see also Mains, Pipe, Services, Tanks, Valves
  - design and construction of, at Milwaukee, Wis., 1026
- operation and maintenance of, at Milwaukee, Wis., 1063
- pollution of, by bacteria, study of, at Detroit, Mich., 1356 practical studies of, 957
- Drinking water; influence of various chemicals on palatability of, 1185
- U.S. Public Health Service Standards; report of 1943 Cleveland Conference on,
- water standards; U.S. Public Drinking Health Service; interpretation of, 1267 editorial comment on, 1271
- Duval County, Fla.; investigations of ground water in, 171

## $\mathbf{E}$

- Employees; see Personnel organization of, in professional field and public services, 762
- Equipment: chlorination; canvass of, 187 electrical pumping; economics of, 1315 Errata, 1108, 1241

### F

- Federal Fair Labor Standards Act; as concerns water companies, 535
- Federal transportation tax; water department employees exempt from, 1005
- Filters; Anthrafilt as a medium in, 431
- Filtration; diatomite; development of, for field troops, 1208
- Financing; federal government; problems of, for postwar water works projects, 1254 interconnections, in New Jersey, 1301
  - in New York State, 1294 postwar planning, in Michigan, 987, 991 water works improvements, in Pacific
- Northwest, 1256 Findlay, Ohio; calcining sludge from the water softening plant at, 1180
- Fire hydrants; historical development of, 928

- Fittings; design of, for steel pipelines, 29
- Flanges; fabricated steel ring; design of, for water pipe service for low pressures and temperatures, 968
- Flocculation; vertical; revolving paddles as a new feature in design of, 151
- Florida; investigations of ground water in, 169 Flow; ground-water; determination of, by
- piezometric surface map, 174 incremental; measurement; calculation of
- resistance coefficient from, 163
- Fort Dodge, Iowa: wartime management of water and sewage works in, 1093

# G

- Gastro-enteritis; study of bacteria causing, at Detroit, Mich., 1356
- Geology; ground-water, 169
  - importance of studies on, for postwar program, 1244
- Grounding; committee report on, 383 electric; effects of, on water pipe, 563
- electric circuits on water pipe; statement of A.W.W.A. policy, 381
- Ground water; see also Wells
- discharge areas of, in Florida, 176
- investigations of, in Florida, 169 public supplies; sanitation manual for, 501
- recharge areas of, in Florida, 175 utilization of, in a postwar program, 1242
- Grouting; cement; recommended procedure for sanitary protection, 530

# н

- Hazards; contamination; in municipal water supply, 351
  - cross-connection; between a direct city supply and recirculating water, 350 legal limits of, 874
- main laying; prevention of, 542
- Housing Utilities Standards; see War Production Board
- Hydrants; fire; historical development of, 928 water department practice and regula
  - tions regarding, 463 maintenance and repair of, 560
- standard; used at Milwaukee, Wis., 1042 Hydraulics; problems; in Army-owned water plant, 458

- Incodel; creation of, for Delaware River Basin, 4
- Indiana; southern; methods of chlorination at four plants in, 1328

Dec. 1

Em

pro

New

New

a

0

pos

Nome

North

Nova

Occu

Opera

wa

Orego

Orga

Gr

Orth

Orth

eff

Paci

Pala

Pana

Pasa

Pers

pi

pi

Phil

Pipe

d

1

Industrial water plants; reducing wastes in, 420

Intakes; construction of, at Milwaukee, Wis., 1024

Interconnections; construction and financing of, in New Jersey, 1301 in New York State, 1294

Ion-exchange materials; application of, to municipal water supplies, 876

## J

Job classification; standard; in standard wage and salary administration plan, 408 Joints; field; design of, for steel pipelines, 28

## K

Kenosha, Wis., wartime management of water and sewage works in, 1086

## L

Lake Michigan; quantity and quality of plankton in south end of, 669

Lakeside, Wis.; prevention of corrosion in boilers of, 303

Law; legal limits of a water supply system, 865

Leakage; see also Conservation rates of flow from faucets, 752

sources of, in distribution systems, 1261

Liabilities; utility; limits of, 1265

Lime; recovery of, from water softening sludges, 1145

Lining; see also Coating

asphalt; field removal of, from 24-inch steel pipe, 59

cement; installation of, in cast-iron pipe in place, San Diego's experience in, 64

Litigation; see Law

London, England; history of water supply in, 703

Los Angeles County; emergency chlorination program in, 186

### M

Mains; see also Distribution systems, Pipe safety in construction of, 542

Maintenance; hydrants, 560

inspection and repairs for, 560

meter; methods of testing and repairing in, 557

pump; inspection of parts for, 553 to prevent waste, 546

valve, 561

water works system; at Milwaukee, Wis., 1063

Management; see also Administration, Personnel, Selective service municipal utility; problems and forms d in Nebraska, 1230 in Virginia, 1236

public water supply; in other American republics, 1097

water and sewage works, 734

water works; problems and forms of, 1222 1239

Marshalltown, Iowa; calcining sludge from the water softening plant at, 1170

Martinez, Calif.; recent design of flocculation tanks for, 155

Melbourne, Australia; design of research laboratories for Melbourne and Metropolitan Board of Works at, 1109

Metals; trace; concentrations of, in drinking water, 637

Meter discs; warped; reconditioning of, 90 Meter reading; bi-monthly; benefits of, 1371 customer calendar for, 1003

Meters; 4- and 6-in.; tests of, to determine the effect of traps and approach piping on the accuracy of, 191

installation of, water department practice and regulations regarding, 469

large; maintenance of, 558 small; maintenance of, 557

Michigan; financing of postwar plans in, 99 991

study of water rates in, 998

Micro-organisms; action of chlorine and chloramine compounds on, 1200

destruction of, by formation of toxic substance theory, 1193

by nascent oxygen theory, 1192

by nascent oxygen and direct chloring tion theory, 1193

deterioration of rubber products by, 439 Milwaukee, Wis., design and construction of water works at, 1019

Minerals; contamination by, hygienic significance of, 645

## 1

Nassau County, Fla.; investigations of ground water in, 171

National Association of Railroad and Utilities Commissioners; report of Depreciation Committee of, 616

National Board of Fire Underwriters; studies on the adequacy of distribution systems by, 957

Nebraska; water works management and administration in, 1230

New Jersey; construction and financing of interconnections in, 1301

orms of

merican

f, 1222

ge from

culation

eseard

Metro-

rinking

, 90

, 1371

ermine

piping

ractice

n, 987

d chlo-

c sub-

lorina-

439

tion of

c sig-

round

tilities

iation

tudie

stem

and

ng of

- Emergency Water Supply Commission; 1942 recommendations of, 1302
- proposed canal in; effect of, on water supplies, 901
- New York City; municipal regulation and sanitary control of water for refrigeration and air conditioning in, 334
- New York State: construction and financing of interconnections in, 1294
- postwar planning of water works in, 1247 Nomographs; calculation of alkalinities and
- Nomographs; calculation of alkalimities and free carbon dioxide by the use of, 895 North Carolina; water supply in, in 1766, 278
- Nova Scotia; problems of utility administration in, 743

## 0

- Occupational deferment; see Selective service Operation; joint; water and electric utilities, in Nebraska, 1234
- water works system; at Milwaukee, Wis.,
- Oregon; water-borne outbreak in shipyard in, 425
- Organisms; Gram-negative; incidence of, in Detroit distribution system, 1356
- Gram-positive; incidence of, in Detroit distribution system, 1356
- Ortho-tolidine; use of, in water treatment of four southern Indiana plants, 1343
- Ortho-tolidine-arsenite test; chlorine residual determination by, 296, 1343 effect of interfering agents on, 300

# P

- Pacific Northwest; financing water works improvements in, 1256
- Palatability; drinking water; influence of various chemicals on, 1185
- Panama City, Fla.; design of water works at, under wartime conditions, 663
- Pasadena, Calif.; Devils Gate Reservoir; effect of detritus in, on Monk Hill Basin groundwater supply, 315
- Personnel; employee magazine for, 780 programs for; recognition of need for, 88 progress rating of, basic forms for, 603
- records; basic forms for, 603 Philadelphia; water conservation in, 497
- Pipe; cast-iron; cement lining of, in place, in East Bay Municipal Utility District, 69 at El Centro, Calif., 72
  - at San Diego, 64 cleaning of, preparatory to cement lining, in San Diego, 64
  - design and protection of; improvements in,

- effects of electric grounding on, report of research project on, 563
- fabricated steel ring flanges for, design of, for low pressures and temperatures, 968
- steel; 24-inch; field removal of asphalt lining and coating from, 59
  - 36-inch; removal, reconditioning and installation of, by the Metropolitan Water District of Southern California, 43
  - 44-inch; used; specification requirements for reconditioning and strengthening, 62
- Pipelines; steel; reconditioning and protection of in place, 53
- outline of design factors for, 23
- Plankton; quantity and quality of, in south end of Lake Michigan, 669
- Pollution; see also Contamination
- stream; standards for prevention of, in Delaware River, 6
- Population; postwar distribution and movement of, in Britain, 16
  - wartime shift of, effect of, on water conservation, 698
- Port Washington, Wis.; prevention of corrosion in boilers of, 305
- Postwar planning; analysis of needs for water works systems, 990
  - checklist for water works executives, 578 financing of, in Michigan, 991
  - from water engineer's standpoint, in
  - Britain, 13 improvements to water supply systems, 273
  - program for; in Cumberland, Md., 76 utilization of ground water in, 1242
  - promotion of water and sewage works development, 725
  - public works construction, 755, 1374
  - recognition of need for, in Delaware River Basin states, 11
  - state assistance in, 987
  - water works; program for, in New York State, 1247
- in the Southwest, 1251

  Pre-treatment; effect of, on quality of filtered
- water, 1216
  Priorities; see also War Production Board
  copper; Order M-9-c-4 as amended January
- 24, 1944, 255
  - form WPB-2774; revision of, 860 Housing Utilities Standards, as amended
    - August 31, 1944, 1139 as amended November 15, 1944
- Limitation Order L-335, issued March 22, 1943, release WPB-5251 relating to, 552
- Order P-43 as amended July 22, 1944, 885

Dec

de

pı

re

Serv

fir

Seve

Shre

Slud

Soft

Sout Spill

Split

Stab

Stan

Stora

Supe

Supp

gre rui U.

wa

Surv

Tank

Thre

Thro

Tran

Treat

sev

Supplementary Orders U-1 as amended April 6, 1944; changes which affect water utilities, 582

Utilities Order; U-1; administrative letter of January 22, 1944, on, 238 administrative letter to all utilities,

August 31, 1944, 1125
as amended January 22, 1944, 241
as amended August 31, 1944, 1131
as amended November 15, 1944, 1379
U-1-a as amended January 22, 1944, 250
U-1-d as amended January 22, 1944, 251
as amended August 31, 1944, 1141
as amended November 15, 1944, 1380

U-1-e as amended January 23, 1944, 150 revocation as of August 31, 1944, 1141 U-1-f as amended January 22, 1944, 251 as amended August 31, 1944, 1142

as amended November 15, 1944, 1380 U-1-g as amended January 22, 1944, 253 as amended August 31, 1944, 1143 U-1-h as amended January 22, 1944, 253

Production record; balancing with sales record, problems of, 1260 Public works; postwar planning and financing

Public works; postwar planning and financing of, 755, 1374

Publications; committee report on, 210
Pumping; consumption statistics of, at Milwaukee, Wis., 1034

electrical; economics of, 1315 problems of, in army-owned water plant, 457

Pumping stations; construction and installation of, at Milwaukee, Wis., 1024

Pumps; care of, to stop waste, 546 centrifugal; discharge valve control, design and operation of, at Milwaukee, Wis.,

maintenance of, inspection of parts for, 553 portable; design and construction of, at Cleveland, 658

well; corrosion of, 886

Purification; see also Treatment water treatment methods of, involving sodium silicate, 626

Purification plant; design and construction of, at Milwaukee, Wis., 1029 problems with, at Milwaukee, Wis., 1032

# Q

Quality; economic losses from deficiencies in, 263

ground water; in Florida, 174

# F

Radio channel allocations; application for, by public water supply industry, 1285 Radio facilities; present and estimated; for water utilities; data on, 1285

Radio Technical Planning Board; testimony of, presented before Federal Communication Commission. 1286

Rates; meter; for service during construction; water department practice and regulations regarding, 466

schedule of, 1079 typical problems of, 1076

victory garden, 141 water; study of, in Michigan, 996

Red water; treatment of, in army-owned water plant, 460

Refrigeration; see also Air conditioning municipal regulation and sanitary control of water for, 334

Regulations; water department, 463 water utility; in Wisconsin, 921 Repairs; see also Maintenance

hydrant, 560 valve, 561

Reservoirs; design and construction of, at Milwaukee, Wis., 1027

Residuals; chlorine; analysis of, in finished water, at four southern Indiana plants, 1343

use of ortho-tolidine arsenite in test for, 1343

Retirement systems; growth of, during past ten years, 138

Rubber; deterioration of, by micro-organisms,

synthetic; deterioration of, by microorganisms, 447

# S

Sacramento; design of flocculation units in, 151

Safety; see Hazards

Sales record; balancing with production record, problems of, 1260

Salt water; encroachment of, in ground water of Florida, 183

San Diego; experience of, in cement lining of cast-iron pipe in place, 64

Sanitation; manual of; for public groundwater supplies, 501

U.S. Public Health Service Standards on, report of 1943 Cleveland Conference on, 781

water; need of facilities for, 259

Saturation index; use of, in determining calcium carbonate saturation, 473

Selective service; see also War Production Board ted; for

stimony

munica.

ruction

regula.

-owned

control

of, at

nished

plants,

est for,

g past

nisms,

micro-

its in,

uction

water

ing of

ound-

ls on,

erence

nining

ction

Ş

0

deferments; method of procedure for, 295 outline of new draft instructions, 696 procedure; advice to employers on, 690 re-employment policies of Selective Train-

ing and Service Act; Local Board Memorandum No. 190-A, 794 Services; abandoned; water department prac-

tice and regulations regarding, 464 fire protection; water department practice and regulations regarding, 463

Seventh Service Command; army post water plant operation in, 454

Shreveport, La.; wartime management of water and sewage works in, 1094 Sludge; water softening; recovery of calcium

carbonate or lime from, 1145, 1170 Softening; lime-soda; at Wright Aeronautical

Softening; lime-soda; at Wright Aeronautica Corp., 1146

Southern California; see California Spillways; dam; effect of floods on, 132

Split treatment; recent developments of, in water softening, 675

Stability index; use of, in determining amount of calcium carbonate formed by a water, 474

Standards; U.S. Public Health Service; drinking water; action of A.W.W.A. Board of Directors on, 213

1942 revision of, 131 Storage; see also Reservoirs, Tanks

ground water; capacity of aquifers for, 177 Super-chlorination; control of iron and sulfur organisms by, 1349

practice of, at four southern Indiana plants, 1328

Supplies; general requirements of, 262 ground-water; sanitation manual for, 501 rural; need for, in Britain, 15 U.S.; present status of, 260

water; de-ionized; economics of, 876 effect of proposed New Jersey canal on, 901

management of; see management Survival and Retirement Committee; report of, 832

## T

Tanks; storage; foundations for, at Milwaukee, Wis., 1028

Threshold odor tests; use of, in determining palatability of drinking water, 1191

Throttling; as a method of electrical pumping, 1315

Transmission; ground water; capacity of aquifers for, 178

Treatment; promotion of, patented devices for use in, 129 sewage; effect of, on poliomyelitis virus, 82 water; in army post plant, 459 Turbidity; color compensation for, in residual chlorine indicator and recorder, 772

## U

U.S. Public Health Service; drinking water standards of; 1942 revision of, 131 interpretation of, 1267

inventory of water works systems by, 265 Utilities; administration of, in Canada, 740 in Nova Scotia, 743

in Ontario, 753 mobilization of, for war, 838

priorities for; see Priorities privately-owned; management and ad-

ministration of, in California, 1224 publicly-owned; management and administration of, in California, 1224

reconversion of, from wartime to peacetime operations, 847

water; legal limits of, 1265

postwar ownership and control of, in Britain, 13

regulation of, in Wisconsin, 921

West Coast; War Production Board's policies as related to, 32

Utilities Commodity Tax; passage of, at Columbus, Ohio, 581

Utility extension rules; fundamentals of, 311

## V

Valves; air; design of, for steel pipelines, 29 discharge-control; design and operation of, at Milwaukee, Wis., 1070 gate; use of, at Milwaukee, Wis., 1042 maintenance and repair of, 561 stop-and-waste; water department practice and regulations regarding, 465

Victory gardens; rates for, 141 Virginia; State Corporation Commission of, jurisdiction of, 284

# W

War; problems of jointly administered water and sewage works during, 1085

War Production Board; administrative letter to all water utilities, September 1, 1944, 1129

Housing Utilities Standards amended, 419
Office of Manpower Requirements; advice
to employers regarding selective service
procedure, 690

Office of War Utilities; administrative letter on two-way mobile radio equipment, to all electric, gas, water and communication utilities, 1284

- program and policies of Water Division, 850
- orders; see Priorities
- policies of; as related to West Coast utilities, 32
- Waste; see also Leakage
  - causes of, due to improper pump maintenance, 546
  - industrial, reduction of, 420
  - rates of flow from leaky faucets, 752
- Water works practice; committee report on, 201

- review of; in other American republics, 110 technical advancement in, 128
- Water works systems; inventory of, by US Public Health Service, 265
- small; for unincorporated areas, 290 Wells; see also Ground water
- flow of water in, in Duval County, Fla., 173 Winston-Salem, N.C.; water supply in, in 1766, 278
- Wisconsin; regulation of water utilities in, 92: Wright Aeronautical Corp., Cincinnati, Ohio calcium carbonate and lime; recover

from water softening sludges at, 1146

ALEX

BASC

# **Author Index**

ACKERMAN, T. V. & LYNDE, E. J., effect of storage reservoir detritus on ground water, 315

Vol.3

blics, 110 , by U.S 90

Fla., 17 ly in, is ies in, 92 ati, Ohio recover

, 1146

ADAMS, C. D., chlorination practices at four Southern Indiana water purification plants, 1328

ALDRICH, E. H., summary of report of Depreciation Committee 1943 NARUC, 616

survival and retirement experience with water works structures-a committee report, 832

ALEXANDER. LOUIS J., discussion-chlorination practices at four Southern Indiana water purification plants, 1340

control of iron and sulfur organisms by super-chlorination and de-chlorination, 1349

ALLEN, JAMES H., Delaware River Basina home rule program for the development of its resources, 1

AMISS, THOS. L., see LADUE, WENDELL R. ARNOLD, GERALD E., discussion—symposium on water works management and administration, 1239

AYERS, LOUIS E., a study of water rates in Michigan, 996

BACHMANN, FRANK, the economics of deionized water supplies, 876

BARNARD, RUSSELL E., outline of design for steel water pipelines, 23

BASCOM, CARLETON V., field removal of asphalt lining and coating from 24-inch steel pipe, 59

BECKWITH, H. E., discussion-practical studies of distribution systems, 965

BECKWITH, JOSEPHINE D., see ZOBELL, CLAUDE E.

BENNETT, BOYD A., discussion—the legal limits of a water supply system, 871

BERRY, A. E., utility administration in Canada, 740 BERRY, HENRY, London water supply, 703

diatomite water filtration developed for field troops, 1208 BLECK, HENRY B., what kind of public

BLACK, HAYSE H. & SPAULDING, CHARLES H.,

works?, 1374

BOOTH, GEORGE W., practical studies of distribution systems, 957

BOWLBY, H. V., discussion-corrosion of well pumps, 890

Brown, Herbert H., operation and maintenance of the Milwaukee water works system, 1062

Bruce, C. J., a medium size city puts on its thinking cap, 76

BURDICK, CHARLES B., a review of the cost of water works structures, 821

CALDWELL, D. H., automatic residual chlorine indicator and recorder, 771

CAPEN, CHARLES H., effect of the proposed New Jersey ship canal on water supplies,

modernizing meter rates, 1076

CAREY, WM. N., planning for postwar construction, 755

CHANG, SHIH LU, destruction of microorganisms, 1192

CHAPIN, CARL K., California State Employees' Retirement Act and its effect upon municipal water utility employees, 134

CHOLAK, JACOB, see KEHOE, ROBERT A. COOPER, H. H., JR., ground-water investigations in Florida (with special reference to Duval and Nassau Counties), 169

COUGHLAN, R. E., discussion-corrosion of well pumps, 890

CRANSTON, H. HOWARD, utilization of ground water in a postwar program, 1242

CRITCHLOW, H. T., construction and financing of interconnections in New Jersey, 1301

DAVIS, D. E., check the use of water, 599 DETWEILER, JOHN C., see HATCHER, MEL-VIN P.

Dec. 1

CE

6

ta

KNUD

KRUM

KURA

LACK

LADU

g00

int

LAMM

LANG

LARG

LARS

LEWI

Long

LONG

wa

LUDY

LYNE

MAC

MAC

MAY

McD

McL

McL

McN

MILI

MIL

1

d

tl

p

DEVENDORF, EARL, postwar planning of water works in New York State, 1247

DIEMER, ROBERT B., the removal, reconditioning and installation of 36-inch pipe by the Metropolitan Water District of Southern California, 43

Dodson, Roy E., Jr. & Farrell, A. J., waterborne outbreak in an Oregon shipyard,

425

Dye, John F., the calculation of alkalinities and free carbon dioxide in water by the use of nomographs, 895

EASTER, H. J., see HILL, H. O.

EITEL, FRED, safety in water main construction, 542

ELIASSEN, ROLF & GOLDSMITH, PHILIP, report of a research project on the effects of electric grounding on water pipes, 563

ERICKSON, D. L., see also HATCHER, MEL-VIN P.

water works management and administration in Nebraska, 1230

FALCK, EDWARD, mobilizing the utilities for war, 838

FARRELL, A. J., see Dodson, Roy E., Jr.

FARRELL, L. L., McLean, W. R. & Heinecke, C. W., discussion—San Diego's experience in cement lining of cast-iron pipe in place, 69

FAYE, MARTIN see HASSLER, J. W.

FILBY, E. L., the promotion of water and sewage works development, 725

GILCREAS, F. WELLINGTON & HALLINAN, F. J., the practical use of the ortho-tolidinearsenite test for residual chlorine, 1343

GILLESPIE, WYLIE W., water works design under wartime conditions, 662

GOLDSMITH, PHILIP, see ELIASSEN, ROLF

GORDON, CHARLES W., calcining sludge from a water softening plant, 1176

GORMAN, ARTHUR E., War Production Board's policies as related to West Coast water utilities, 32

program and policies of Water Division, OWU, 850

Gotaas, Harold B. & Mitchell, Robert D., management and control of public water supply services in the other American republics, 1097

Grayson, L. W., reconditioning and protection of steel pipelines in place, 53

GRIFFIN, A. E., discussion—chlorination practices at four Southern Indiana water purification plants, 1341 HALL, HARRY R., developing consumer cooperation in reducing water consumption, 415

HALLINAN, FRANCIS J., see also GILCREAS, F. WELLINGTON

tests for active residual chlorine and chloramine in water, 296

HANSEN, PAUL, engineering and water works practice, 127

HARNISH, C. P., victory garden rates and problems, 141

HASSLER, J. W. & FAYE, MARTIN, influence of various chemicals on palatability of drinking water, 1185

HATCHER, MELVIN P., ERICKSON, D. L.,
DETWEILER, JOHN C. & WEIR, W. VIC.
TOR, water department practices and
regulations, 463

HAY, HAROLD R., water purification methods involving sodium silicates, 626

Heinecke, C. W., see Farrell, L. L. Hepler, John M., postwar planning, 989 Hicks, Morris L., stop waste—look after

your pumps, 546

HILL, H. O., LEWIS, W. W. & EASTER, H. J., fabricated steel ring flanges for water pipe service for low pressures and low temperatures, 968

HIRSCH, A. ADLER, a consolidated coliometer for streamlined water bacteriology, 1365

HOEFER, HARRISON B., development of centrifugal pump discharge valve control at Milwaukee's Riverside Pumping Station, 1070

HOOKER, H. LESTER, jurisdiction of the State Corporation Commission, 284

Hoskins, J. K., discussion—the legal limits of a water supply system, 875

HowLand, W. E., discussion—practical studies of distribution systems, 966

Howson, Louis R., dollars and sense of depreciation, 803

HUNTER, HOMER A., postwar water works construction in the Southwest, 1251

HYDE, CHARLES GILMAN & LUDWIG, HARVEY F., some new features in the design of vertical flocculation units, 151

JACKSON, L. A., historical development of the fire hydrant, 928

JORDAN, HARRY E., discussion—the deterioration of rubber products by microorganisms, 452

Kehoe, Robert A., Cholak, Jacob & Largent, Edward J., the concentrations of Vol. 36

ner co-

mption,

EAS, F.

d chlo-

works

es and

ence of

ity of

), L.

. VIC-

and

thods

89

after

H. J.,

water

low

neter

1365

cen-

ol at

tion,

state

ts of

tud-

de-

rks

VEY

of

the

ra-

10-

R-

of

certain trace metals in drinking water, 637

the hygienic significance of the contamination of water with certain mineral constituents, 645

KNUDSEN, H. A., see MOULLET, F. L.

KRUMBEIGEL, E. R., transmission of virus diseases by water, 81

KURANZ, A. P., balancing the production with the sales record, 1260

LACKEY, JAMES B., quality and quantity of plankton in the south end of Lake Michigan in 1942, 669

LADUE, WENDELL R., Ohio plan for financing sewage works improvements, 323 good water works management, 734

Myers, James W., Jr., Pray, John W., & Amiss, Thos. L., wartime problems of jointly administered water and sewage works, 1085

introduction—symposium on water works management and administration, 1222

LAMMERS, HERBERT B., see SHEEN, ROBERT T. LANGIUS, ADRIAN, state assistance in engineering design and planning, 987

LARGENT, EDWARD J., see KEHOE, ROBERT A. LARSON, T. E. & MILLIS, J. B., corrosion of well pumps, 886

LEWIS, W. W., SEE HILL, H. O.

Long, F. H., conditioning water for steam production, 303

Longwell, J. S., discussion—fundamentals of utility extension rules, 314

water works management and administration in California, 1224

LUDWIG, HARVEY F., see HYDE, CHARLES GILMAN

LYNDE, E. J., see ACKERMAN, T. V.

MACDONALD, FRANK P., discussion—corrosion of well pumps, 893

Macnab, Ira P., utility problems in Nova Scotia, 743

MAYER, EDWARD B., the significance of good employee-employer relationships, 86

McDonnell, Elizabeth, does the team know the score?, 777

McLaughlin, Martin J., water conservation in Philadelphia, 497

McLean, W. R., see Farrell, L. L.

McNaughton, E. F., fundamentals of utility extension rules, 311

MILLER, LEWIS B., reducing water waste in industrial plants, 420

MILLIS, J. B., see LARSON, T. E.

MITCHELL, ROBERT D., see GOTAAS, HAROLD B.

Moore, Charles E., municipal utility management in the state of Virginia, 1236

MOULLET, F. L. & KNUDSEN, H. A., effect of approach piping on the accuracy of water meters, 190

MURDOCH, JOHN H., JR., the legal limits of a water supply system, 865

Myers, James W., Jr., see Ladue, Wendell R.

Nelson, Frederick G., recalcination of water softening sludge, 1178

NILES, PHILIP B., a standard wage and salary administration plan, 405

employee progress rating and personnel records, 603

NUSSBAUMER, NEWELL L., constructing and financing interconnections in New York, 1294

OBMA, CHESTER A., army post water plant operation in the Seventh Service Command, 454

PATTERSON, W. L., the Camp Robinson water supply line, 1323

Pedersen, H. V., calcining sludge from a softening plant, 1170

Philhower, Sara K., experiences of a lady water works chemist, 198

PRAY, JOHN W., see LADUE, WENDELL R.
PYLE, FRED D., specification requirements for reconditioning and strengthening used 44-inch steel pipe for permanent installation, 62

RANERI, RAY, see STREETER, H. W.

RAWN, A. M., employee organization in the professional field and the public services, 762

REICHMAN, IRVING, municipal regulation and sanitary control of water for refrigeration and air conditioning, 334

RHODES, FRED A., San Diego's experience in cement lining of cast-iron pipe in place, 64

RODEN, GEORGE A., maintenance and repair of meters, 557

ROWNTREE, N. A. F., water engineering after the war, 12

RYZNAR, JOHN W., a new index for determining amount of calcium carbonate scale formed by a water, 472

SCHUNKE, G. B., financing water works improvements in the Pacific Northwest, 1256

All su

Activa

Admir

see

Verati

Algae

Analy H

Annua R

Appar

Army Artesi Auxili

Bacter
Bacter
Bacter
Bentor
Billing
Biolog
Boiler
Boilers
Bombi

Canad See of Catho Chemisee of Chlori

see i

- SCHWADA, JOSEPH P., the design and construction of the Milwaukee water works, 1019
- Scorr, O. H., utility administration in Ontario, 753
- SEEMANN, CARL W., hydrant and valve inspection and maintenance, 560
- Shannon, Albert M. & Wallace, William M., the bacteria in a distribution system, 1356
- Sheen, Robert T. & Lammers, Herbert B., recovery of calcium carbonate or lime from water softening sludges, 1145
- SIMMERMACHER, S. C., Cleveland's mobile emergency pump, 658
- Sopp, C. W., emergency chlorination program in Los Angeles County, 186
- Sopp, George C., reconditioning of warped meter discs, 90
- Spaulding, Charles H., see also Black, Hayse H.
  - discussion—automatic residual chlorine indicator and recorder, 776
- STOCK, HARRY, pump maintenance, 553
- STREETER, H. W. & RANERI, RAY, national inventory of needs for sanitation facilities —public water supply, 259
- Sullivan, Richard A., postwar financing in Michigan, 991

- Sydnor, Garland S., small water works for unincorporated areas, 290
- Thompson, Ross E., resistance coefficient calculation from incremental flow measurement, 163
- TURNER, H. G., Anthrafilt and its significance,
- VEATCH, N. T., municipal depreciation accounting practices, 811
- Waldo, Cornelius T., water utility liability, 1265
- Walker, Donald, developments in split treatment water softening, 675
- WALLACE, WILLIAM M., see SHANNON, AL-BERT M.
- Wasson, R. H., discussion—corrosion of well pumps, 891
- WEIR, W. VICTOR, see HATCHER, MELVIN P. WHITNEY, W. F., Wisconsin's concept of water utility regulation, 921
- ZoBell, Claude E. & Beckwith, Josephine D., the deterioration of rubber products by micro-organisms, 439

# **Abstract Index**

All subjects and page numbers in boldface type are the first pages of topic sections or of numerous abstracts on the particular subject.

## A

Activated carbon; see Canadian Water Supplies

Administration, 916, 1115

see also Foreign Water Supplies, Health,
Law, Wartime Water Works Problems

Aeration; see Treatment Algae Control, 492

see also Impounding Reservoirs
Analysis; see Bacteriology, Chemical Analysis,
Hydraulics, Laboratory Control
Annual reports; see Water Works Annual

Reports
Apparatus; see Laboratory Control

Aqueducts, 235

Vol. 36

rks for

fficient measicance,

on ac-

bility.

split

i, AL

of well

IN P.

of wa-

PHINE

ducts

Army, water supply for; see Wartime Water Works Problems

Artesian water; see Ground Water Auxiliary supplies; see Industrial Water Supply, Wartime Water Works Problems

## B

Bacteria; see Bacteriology, Health
Bactericides; see Bacteriology
Bacteriology, 685
Bentonite clay; see Impounding Reservoirs
Billing; see Administration
Biology; see Bacteriology, Health
Boiler water pumps; see Corrosion
Boilers; see Industrial Water Supply
Bombing; see Distribution Systems, Wartime
Water Works Problems

Break-point chlorination; see Bacteriology, Distribution Systems

Brine systems; see Corrosion, Industrial Water Supply

## 0

Canadian Water Supplies—General, 1012
see also Water Works Annual Reports
Cathodic protection; see Corrosion
Chemical Analysis, 1273
see also Laboratory Control
Chlorination; see Corrosion, Treatment

Cleaning, main; see Distribution Systems
Coatings; see Corrosion
Coefficients; see Hydraulics
Coliform organisms; see Bacteriology
Collections; see Administration, Rates
Condensers; see Corrosion
Conduits; see Tunnels
Conservation; see Industrial Water Supply,
Postwar Problems
Construction; see Canadian Water Supplies,
Distribution Systems, Foreign Water
Supplies, U.S. Water Supplies, Wartime
Water Works Problems

Consumption; see Postwar Problems
Contamination; see Health, Stream Pollution
Corrosion and Corrosion Control, 371, 590,

## D

Defense; see Wartime Water Works Problems
Disease; see Health
Distribution Systems—Construction and
Maintenance, 487
see also Canadian Water Supplies, Foreign
Water Supplies, Wartime Water Works
Problems
Drilling; see Law, Wells
Drought; see U.S. Water Supplies

### E

Dynamics, fluid; see Hydraulics

Elevated tanks; see Distribution Systems
Employees; see Administration, Postwar
Problems, Wartime Water Works Problems
Engineering; see Administration, Foreign
Water Supplies
Equipment; see Laboratory Control

### F

Evaporation; see Impounding Reservoirs

Filtration; see Canadian Water Supplies Flow analysis; see Hydraulics Foreign Water Supplies—General, 225, 1009

ee als

nnel

see also Ground Water, Water Works Annual Reports

## G

Geology; see Ground Water Ground Water, 228

## H

Hazards; see Health Health, 114 Hydraulics, 1015 see also Aqueducts Hygiene, 114

Litigation, 102

Impellers; see Pumps Impounding Reservoirs, 108 Improvements; see Canadian Water Supplies, Foreign Water Supplies, U.S. Water Supplies, Postwar Problems

Industrial wastes; see Canadian Water Supplies; Industrial Water Supplies, Stream Pollution

Industrial Water Supply, 787
see also Ground Water, Stream Pollution Intakes; see Tunnels Infiltration; see Ground Water

Labor; see Administration, Foreign Water Supplies, Postwar Problems Laboratory Control-Equipment and Apparatus, 1276 Law, 102 Laying; mains; see Distribution Systems Liabilities, 102 Linings, pipe; see Corrosion

## $\mathbf{M}$

Mains; see Corrosion, Distribution Systems, Tunnels see Corrosion, Distribution Maintenance; see Corrosion, Distribution Systems, Postwar Problems, Wartime Water Works Problems Management; see Administration, Postwar Problems Manpower; see Administration, Postwar

Problems, Wartime Water Works Prob-Media; see Bacteriology

Metals; see Corrosion Meter reading; see Administration Minerals; see Chemical Analysis, Treatment Municipal ownership; see Law

Operation; see Administration, Distribution Systems, Wartime Water Works Problems

Ownership; see Law Ozone Treatment, 587

Painting; see Algae Control, Corrosion Percolation; see Ground Water Personnel; see Administration, Postwar Problems, Wartime Water Works Problems Pipelines; see Hydraulics Plankton; see Algae Control Planning; see Foreign Water Supplies, Post. S. W war Problems, U.S. Water Supplies

Poisoning; see Corrosion, Health Pollution; see Administration, Algae Control Health, Stream Pollution

Postwar Problems and Planning, 682 Protective coatings; see Corrosion Public relations; see Administration, Postwar

Problems, Wartime Water Works Prob-Public utilities commissions; see Rates

Pumps and Pumping, 366 Purification; see Algae Control, Stream Pollution, Treatment, Wartime Water Works Problems

## R

Railway facilities; see Industrial Water Supply Rates, 231

Reservoirs; see Impounding Reservoirs Resources, water; see Foreign Water Supplies Riparian rights; see Law

Sampling; see Laboratory Control Sanitary engineering; see Health, Postwar Problems, Wartime Water Works Prob-Sanitation; see Health, Law, Treatment

Scale, boiler; see Corrosion Selective service; see Wartime Water Works Problems

Service; maintenance of; see Distribution Systems, Wartime Water Works Problems

Sewage disposal; see Foreign Water Supplies, Stream Pollution, Treatment Silting; see Impounding Reservoirs

Storage; see Distribution Systems
Stream Pollution and Its Control, 494, 1117 Supplies; see Canadian Water Supplies, Foreign Water Supplies, Postwar Problems, U.S. Water Supplies, Wartime Water Works Problems Swimming pools; see Ozone Treatment

Tanks: see Distribution Systems Treatment-General, 790

r Prob. blems

ontrol,

ostwar Prob-

m Pol-Works

r Sup-

upplies

ostwar Prob-

Works bution Probpplies,

1117 s, Forblems, Water

ge also Algae Control, Bacteriology Canadian Water Supplies, Corrosion, Industrial Water Supply, Ozone Treatment, Stream Pollution, Wartime Water

unnels, 235

U

s. Post- S. Water Supplies-General, 1007

## W

Wartime Water Works Problems, 364, 583 see also Pumping

Wastes; see Canadian Water Supplies, Indus-trial Water Supply, Stream Pollution Water rights; see Law Water Works Annual Reports, 911

see also Foreign Water Supplies Welding; see Distribution Systems Weirs; see Hydraulics Wells, 228

# **Authors of Abstracted Articles**

AKEROYD, E. I., 790 AKIMOV, G. V., 1280 ALLEN, J., 1017 ALLIATA, G., 227 ALLING, S. F., 372 AMOROSI, A. M., 1274 APPLING, JOHN W., 686 ASHLINE, ROBERT R., 374 ASMOLOVA, M. F., 586 ATTWILL, W. H., 372

Bailey, J. F., 490, 917
Baldassi, G., 1273
Barrett, S. G., 491, 791
Bartsch, A. E., 493
Baxter, George, 683
Bean, C. H., 793
Beaver, Wm. C., 688
Bell, Hugh Stevens, 109
Belt, Elmer, 116, 1119
Berry, A. E., 1012, 1014
Bigger, Joseph W., 687
Blackbourn, E. F., 487
Blair, J. Morris, 492
Bliss, Percy H., 1017
Boruff, C. S., 789
Bose, N. C., 230
Boswell, P. G. H., 231
Bradley, C. A., 1012
Braune, Johann-Friedrich, 115
Breil, B., 227
Brewer, John H., 685
Brown, Carl B., 108
Brown, R. H., 1283
Bunker, H. J., 597
Burn, G. A. H., 495

CARLSTON, CHARLES W., 228 CASE, R. Y., 372 CASE, RAYMOND I., 234, 235 CHAMBERS, C. W., 688 CHERNOVA, A. K., 1275 CHRISTIANSEN, J. E., 228 CLARK, RALPH O., 374 CLIFTON, C. E., 115 CODY, B. L., 366 COIN, L., 1273 Cole, E. Shaw, 1014 Collins, James H., 365 Collins, W. D., 787 Corley, R. T., 685 Coventry, A. F., 1012 Crowley, John J., 489 Di

HHHHHHHH

HA HE HE

HE

HI HI

Ho

Ho

Ho

Но

Hu

Hu

IMI

JEN

EV

OF

OF

OF

JUI

KA

KA

KA

KA

KE

KE

KE

KE

KEN KIN

KN

Koi

LAC

LAN

LAF

LEA

LEI

LEN

Daily, J. W., 369
Dankov, P. D., 1280
Davenport, H. R., 916
Davies, Delwyn G., 919, 1011
DIAMOND, WILLIAM J., 365
DINNIS, F. R., 683
DORER, O. H., 370
DOTT, ROBERT H., 1275
DUY, C., 228
DYADICHEV, N. R., 687

EGGER, FRITZ, 229 EISENSTECKEN, F., 375 EKLUND, KARL, 370 ELLIOT, NORMAN G., 1009

Fassnacht, G. G., 494 Finlay, H. M., 227 Fleming, John D., 788 Fleming, Joseph, 234 Flook, Evelyn, 115 Flug, Benjamin S., 1277 Folsom, R. G., 370

Gardner, W. Clarke, 585 Geary, J. F., 236 Geiger, Ernst, 1274 Geil, G. W., 373 Gerhardt, G. W., 493 Geyer, John C., 229 Goetchius, D. R., 371 Golubey, A. I., 1280 Goodson, Louis H., 1278 Gordon, J., 688 Gottschalk, L. C., 110, 111 Green, C. A., 114 Green, Norman, 683 Grill, E., 1275 Groebe, 1280 Gunder, Dwight F., 1018 GUSINSKAYA, S. A., 1275 GUY, DAVID J., 583

Haase, L., 375
Hall, R. W., 487
Hankins, G. A., 1015
Hanley, J. P., 789
Harden, Charles H., 588
Hardy, Eric, 113
Harmand, J. J. L., 598
Harrington, John H., 1014
Harrison, Ernest B., 1282
Harrison, T. S., 1277
Hawksley, Thomas Edwin, 1009
Heinz, G., 372
Held, W. D., 492
Hentsche, 227
Hepler, John M., 918
Hickox, G. H., 1018
Hill, F. J., 366
Himman, Jack J., Jr., 364
Hoerner, Charles G., 237
Holden, H., 230
Hopkins, Edward S., 788
Howard, Norman J., 791
Hudson, J. C., 598, 1280
Humphreys, G. Howard, 683
Hunsicker, L., 1279
Hupp, Eugene R., 494

IMHOFF, C. E., 788

James, L. H., 685 Jensen, L. B., 686 Jewell, A. B., 689 Johns, M. M., 790 Johnson, A. W., 790 Johnson, H. D., 367 Johnstone, K. I., 688 Juday, Chancey, 492

Kachmar, John F., 492
Kaiser, H., 227
Kalinske, A. A., 1017
Karassik, I. J., 370
Karczynski, Raymond E., 1277
Kegel, Johannes, 1274, 1278
Keim, P., 687
Kenina, A. E., 688
Kennison, Karl R., 236
Kentworthy, L., 1281
King, V. L., 793
Knapp, R. T., 370
Knowles, C. R., 788, 789
Kollath, W., 114

Lackey, James B., 492 Langbein, F., 226 Lapworth, Charles, 226 Leaf, W. B., 788 Leise, J. M., 685 Lenz, Arno T., 1018 Lester, R. E., 793 Levina, M. I., 1276 Lewis, R. J., 684 Lichtenberg, H., 1282 Lloyd, David, 226, 487, 491 Loewinger, Isolde E., 115 Long, H. F., 685 Lvov, G. K., 598

MacDonald, Ronald G., 788 MACLEOD, M. C., 114 MALLOY, WM. S., 106 Manning, H. D., 683 Manser, E. V., 1014 Martin, R. B., 788 MATHIS, ALICE L., 1277 MAYBAUM, 227 McAdam, D. J., Jr., 373 McDonald, Gordon S., 585 McKee, F. J., 493 McKinney, D. S., 1274 McLean, W. N., 225 McLellan, A. G., 488 · MEGREGIAN, STEPHEN, 1122 MEYER, Aug. F., 227 MEYER, F., 112 MICHAELIS, OTTO, 1274 MILLER, LEWIS B., 788 Mockridge, C. R., 370 Mohlman, F. W., 1120, 1121 Mom, C. P., 686 Moon, Arthur Montague, 488 Morse, Roy R., 230 MORTIMER, C. H., 111 MOUNTIN, JOSEPH W., 115

NACHTIGALL, G., 1275 NEALY, V. L., 372 NELSON, J. HAVELOCK, 687 NEWTON, W. H., 683 NICHOLSON, J. H., 683 NILSSON, GUSTAV, 373 NORDELL, ESKEL, 788

O'Donoghue, Roderick, 788 Overfield, H. V., 589

Parker, Leo T., 108 Patrick, J. G., 788 Patridge, Everett P., 788 Patterson, Marcile, 494 Peterson, Arvid, 370 Picotti, M., 1273 Placak, Oliver R., 492, 586 Pollock, A. K., 487 Polyakov, A. G., 586 Pope, Geo. A., 1282 Posey, C. J., 1018

RAFFETY, SIDNEY R., 225, 683, 684 RAMSAY, HUGH G., 487 RAUCH, G., 687 REED, IRVING MCK., 490 RESSMANN, 374 RICE, THURMAN B., 496, 1120 ROGERS, T. HOWARD, 373 ROHDE, H., 787 ROHWER, CARL, 1017 ROSE, NICHOLAS A., 229 ROWNTREE, N. A. F., 684 RUCCHOFT, C. C., 586, 1122 RUDOLFS, WILLEM, 793 RUSTIGIAN, ROBERT, 687 RYZNAR, J. W., 1279

Sample, C. H., 598
San Martin, Felix, 235
Schneider, W. J., 228
Schneider, W. K., 493
Schott, Stuart, 586, 1122
Seelmeyer, G., 371
Seniff, R., 228
Shchegol, T. S., 598
Shema, B. F., 686
Sherzer, A. F., 370
Shimp, J., 228
Simeone, Miguel A., 237
Simpson, Harrison, 683
Slomyanskaya, F. B., 373
Smith, Bernard, 789
Smith, E. G., 372
Smith, L. G., 232
Smith, Lloyd B., 1008
Smith, Uoyd B., 1008
Smith, Uoyd B., 125
Smith, Russell S., 1121
Stace, Ernest, 918
Stamm, A., 1279
Stangenberg, M., 1120
Steers, Francis H., 368
Stephanoff, A. J., 369
Stevens, J. C., 1018
Stillman, W., 1273
Stirling, James N., 1282
Storr, H., 1277
Strawbridge, H. R. L., 683
Street, A. L. H., 105, 107

STUART, C. A., 687 STURZ, O., 1274 SUCKLING, E. V., 590

Talvitie, N. A., 1274
Tananev, I. V., 1276
Tattersall, F., 487
Taunton, A. J., 370
Taylor, Edward H., 1018
Thompson, Rudolph E., 1277
Thompson, W. J., 1279
Thomson, M. T., 1008
Trembath, R. H. N., 685

VALENTINE, E. H., 1015 VELZ, C. J., 495 VENNARD, JOHN K., 1018 VINICK, ALBERT G., 491 VITELES, MORRIS S., 682

Walker, M. G., 789
Walker, W. W., 1121
Warkentin, E. C., 1275
Warrick, L. F., 493
Waters, Vincent F., 788
Wattie, Elsie, 492, 688
Weiderhold, W., 113
Weir, K. J., 788
Werner, M., 372
Weston, L., 918
Weston, Roy F., 1018
Weite, H., 228
Whitehouse, Harry Edward, 590
Whitson, M. T. B., 587, 590
Wiederhold, W., 1280
Wilda, E. F., 492
Wolman, Abel, 495
Woltman, J. J., 228

Young, G. H., 493 Youngquist, C. V., 585

ZHDANOVA, O. G., 586

